

AMENDMENTS TO THE CLAIMS

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Claims 1-80 (Canceled)

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~~81~~ (Currently Amended): A kit for diagnosing infection with a causative agent of Lyme Disease in a human or animal comprising a protein or peptide of claim ~~103~~ 104.

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Claims 82-103 (Canceled)

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~~103~~ 104 (Currently Amended): A recombinant or synthetic protein or peptide that ~~reacts~~ binds with antibodies to the causative agent of Lyme Disease in infected humans or animals, said protein or peptide selected from the group consisting of:

- (a) an amino acid sequence of SEQ ID NO: 2;
- (b) an amino acid sequence of SEQ ID NO: 14;
- (c) an amino acid sequence encoded by SEQ ID NO: 3;
- (d) an amino acid sequence encoded by SEQ ID NO: 7;
- (e) an amino acid sequence encoded by SEQ ID NO: 11; and
- (f) an amino acid sequence of a fragment of (a) through (e) of at least five amino acids in length; and
- ~~(g) an amino acid sequence that differs from a sequence of (a) through (f) by up to four codon changes in the nucleic acid sequence encoding the amino acid sequence.~~

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~~104~~ 105 (Currently Amended): The protein or peptide according to claim ~~103~~ 104, wherein said fragment is at least eight amino acids in length.

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+05¹~~106~~ (Currently Amended): The protein or peptide according to claim
+03 ¹~~104~~, wherein said peptide or protein is coupled to a substrate that immobilizes said
peptide or protein.

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+06¹~~107~~ (Currently Amended): The protein or peptide according to claim
+03 ¹~~104~~, ~~wherein~~ wherein said peptide or protein is coupled to a detectable label or signal
generating reagent.

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+07¹~~108~~ (Currently Amended): The kit according to claim ⁵~~81~~, further
comprising at least one of the group consisting of a substrate that immobilizes said peptide
or protein, a detectable label, a labeled conjugate, and a signal generating reagent.

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